

## PATENT ABSTRACTS OF JAPAN

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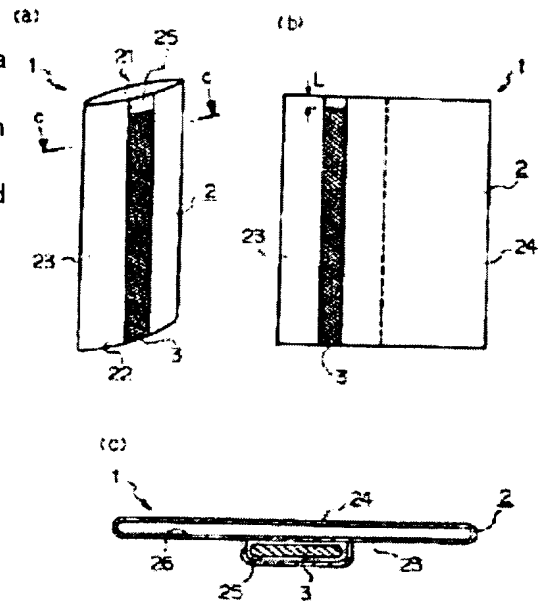
(72)Inventor : TOJO TAKEHIKO  
KOBAYASHI HIDEO  
YOSHIDA TAIJUN  
SATO MASAYASU

## (54) HAIR HOLDER

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a hair holder which enables easy and sure winding of a hair bundle in a prescribed shape.

**SOLUTION:** The hair holder has a tubular body 2 through which the hair bundle can be inserted from an opening part 21 in one end to an opening part 22 in the other and a plastically deformable member 3 which is fitted to the tubular body 2 and which is plastically deformable and can maintain a plastically deformed state. The tubular body 2 is so made that it can follow the plastically deformed state of the plastically deformable member 3 on the occasion when the member 3 is plastically deformed. The member 3 is fitted to the tubular body 2 so that they are movable mutually.



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CLAIMS

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[Claim(s)]

[Claim 1]From an opening of one end, towards an opening of the other end A tube-like object which can insert in a hair bunch, A hair holder with which it enables it to have followed a plastic deformation state of this plastic deformation member when it is attached to this tube-like object, it has a plastic deformation member in which plastic deformation is free and, which can hold a plastic deformation state and said tube-like object carries out plastic deformation of said plastic deformation member.

[Claim 2]The hair holder according to claim 1 which is attached free [ movable to this tube-like object and mutual ] to said tube-like object as for said plastic deformation member.

[Claim 3]It is 1 or the hair holder according to claim 1 or 2 attached two or more to one field of this tube-like object almost in parallel [ said tube-like object is flat shape, and do not have elasticity substantially, and / said plastic deformation member ] with a longitudinal direction of this tube-like object.

[Claim 4]The hair holder according to claim 1 which has the elasticity which can follow a plastic deformation state of this plastic deformation member when said tube-like object carries out plastic deformation of said plastic deformation member.

[Claim 5]Said tube-like object is flat shape, and it has the network structure, and this network structure is a structure deformable to a longitudinal direction and the cross direction of this tube-like object.

Said plastic deformation member is 1 or the hair holder according to claim 1 or 4 attached two or more to one field of this tube-like object to mesh shape or the shape of a lattice almost in parallel with a longitudinal direction of this tube-like object.

[Claim 6]The hair holder according to any one of claims 1 to 5 whose Taber rigidity said tube-like object covers the longitudinal direction overall length, and is 0.4 or less mN-m.

[Claim 7]A tube-like object which has formed a means [ insert / and / from an opening of one end / a hair bunch ] which can be annoyed by the other end, A hair holder with which it enables it to have followed a plastic deformation state of this plastic deformation member when it is attached to this tube-like object, it has a plastic deformation member in which plastic deformation is free and, which can hold a plastic deformation state and said tube-like object carries out plastic deformation of said plastic deformation member.

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to the hair holder used as an auxiliary tool when winding a hair bunch around predetermined shape, when a permanent wave etc. give curl to hair.

[0002]

[Description of the Prior Art]Although the means of the description was known by JP,S11-14546,Y etc. as a method of carrying out reform to hair using a sheet for many years, for example, the handling of hair was difficult for such a means. Then, the hair rolling-up implement made tubed and the hair rolling-up method by the combination of a plastic deformation member are proposed by JP,H10-192036,A as hair rolling-up art in which are easier to deal with hair and it enabled it to also perform handling of reform easily. according to such a tubed hair rolling-up implement, a hair bunch is markedly alike, it becomes easy to deal with it, and there is a very big merit. However, if said hair rolling-up implement is changed into tubed for reform, distortion will arise inevitably between a hair rolling-up implement and a plastic deformation member. This distortion becomes so remarkable that [, so that the hair bunch inserted in a tubed hair holder increases, and ] it is going to attach the big wave of curvature to hair. If reform is performed in the state where distortion is not canceled, the shape changed since stability was large cannot fully be held, and a satisfactory wave cannot be made. That is, it will not be a beautiful circular wave but the wave of an uneven polygon will be formed.

[0003]Therefore, the purpose of this invention is to provide the hair holder which can wind a hair bunch around easy and certainly predetermined shape.

[0004]

[Means for Solving the Problem]This invention persons did the knowledge of the ability to attain said purpose by constituting a tube-like object in the above-mentioned hair holder so that a plastic deformation state of this plastic deformation member can be followed, when carrying out plastic deformation of the plastic deformation member, as a result of repeating various examination. This invention was made based on the above-mentioned knowledge, and towards an opening of the other end from an opening of one end A tube-like object which can insert in a hair bunch, It is attached to this tube-like object, and has a plastic deformation member in which plastic deformation is free and which can hold a plastic deformation state, and when said tube-like object carries out plastic deformation of said plastic deformation member, it provides a hair holder with which it enables it to have followed a plastic deformation state of this plastic deformation member.

[0005]

[Embodiment of the Invention]Hereafter, the hair holder of this invention is explained with reference to drawing 1 and drawing 2 about the one desirable embodiment (a 1st embodiment). As shown in drawing 1 and drawing 2, the hair holder 1 of a 1st embodiment towards the opening 22 of the other end from the opening 21 of one end The tube-like object 2 which can insert in the hair bunch 4, It is attached to this tube-like object 2, and has the plastic deformation member 3 in which plastic deformation is free and which can hold a plastic deformation state, and when said tube-like object 2 carries out plastic deformation of said plastic deformation

member 3, it enables it to have followed it at the plastic deformation state of this plastic deformation member 3. Said plastic deformation member 3 is attached to said tube-like object 2 free movable this tube-like object 2 and mutual. Said tube-like object 2 is flat shape, and does not have elasticity substantially, but as said plastic deformation member 3 is shown in drawing 1, it is attached to one field 23 of this tube-like object 2 one almost in parallel with the longitudinal direction of this tube-like object 2. In drawing 1 (a) and (b), although hatching of the plastic deformation member 3 is carried out and it is illustrated, as shown in drawing 1 (c), the plastic deformation member 3 is stored by the stowage 25 (after-mentioned), and is not exposed in detail.

[0006]The hair holder 1 of a 1st embodiment is explained further in full detail. The tube-like object 2 in the hair holder 1 of a 1st embodiment is the flat shape which pasted up the ends which meet the longitudinal direction in the web material of the shape of a strip of paper of two sheets, and was formed. As shown in drawing 1 (a) – (c), the flat tubed stowage 25 which has the shape which can store said plastic deformation member 3 is established in the longitudinal direction center section of the outside surface of one field 23 of the flat shape in the tube-like object 2. The size of the tube-like object 2 of flat shape can be suitably chosen according to the quantity of the length of hair, or a place to carry out reform and the hair bunch to insert.

[0007]As a web material which constitutes the tube-like object 2, various flexible materials are used, for example, a nonwoven fabric, textiles, knitting, the resin film of porosity or non-porosity, paper, resin nets, or these complexes are mentioned. In this embodiment, it does not have elasticity substantially, but has permeability to the hair treatment for permanent waves, and the nonwoven fabric of 0.4 or less mN-m is used for the Taber rigidity. The above "Taber rigidity" is taper rigidity measured by the "rigidity test method" specified to JIS P8125. Although the thickness in particular of a web material is not limited, it is 5 micrometers – 500 micrometers preferably. The homogeneity of the Taber rigidity and thickness of a web material is more preferred with the whole sheet.

[0008]If maintenance of a plastic deformation state is possible free [ plastic deformation ] as the plastic deformation member 3, various materials will be used, for example, aluminum, stainless steel, copper, etc. will be mentioned. Since corrosion resistance is required, the plastic deformation member 3 is covered with resin (not shown). When the tube-like object 2 carries out plastic deformation of this plastic deformation member 3, the plastic deformation member 3 is attached to the tube-like object 2 so that the plastic deformation state of this plastic deformation member 3 can be followed, but the length is 80% – 100% of the length of the tube-like object 2, or is shorter than the length of the tube-like object 2 0 mm – 30 mm. ["L" shown in drawing 1 (b)] Things are preferred, as for the width of this plastic deformation member 3, it is preferred that they are 0.05 cm – 8 cm, and it can adjust to the range which can change easily by people's power.

[0009]The length and section are slidably selected for the plastic deformation member 3 in the inside of this stowage 25 so that the tube-like object 2 can follow the plastic deformation member 3, as the stowage 25 was mentioned above. The longitudinal direction both ends of the stowage 25 are embarrassed so that the plastic deformation member 3 may not fall out from the inside of the stowage 25.

[0010]Next, the case where permanent wave processing gives curl directly to hair (hair) is explained as one operating mode of a 1st embodiment of the hair holder of this invention, referring to drawing 2. The graphic display of a rod is omitted in drawing 2. First, according to the quantity and the curled shape made profitably like of the hair bunch 4, using the hair holder 1 which consists of the tube-like object 2 which has suitable length and width, as shown in drawing 2 (a), the opening of the opening 21 of the end of the tube-like object 2 is carried out to elliptical, and the hair bunch 4 is inserted from this opening 21. And the hair bunch 4 is made to insert in the tube-like object 2, as shown in drawing 2 (b) until the tip overflows the opening 22 of the other end of the tube-like object 2 for a while. After making the hair bunch 4 insert in the tube-like object 2, as shown in drawing 2 (c) and (d), the hair holder 1 is wound with a desired winding diameter from the opening 22 side of the other end of the tube-like object 2. At this time, a green sand core like a rod may be put in and wound inside the tube-like object 2. The

winding state of the hair bunch 4 may be held using the fixing means of well-known of a rubber band (not shown) etc. Then, the hair treatment for permanent waves is given to the hair bunch 4 from the outside of the tube-like object 2. Its hair is shampooed by inserting and detaching the hair bunch 4 from the tube-like object 2 after predetermined time, and permanent wave processing is completed. When making the hair bunch 4 insert from the opening 21 of the tube-like object 2, it is easy to make the hair bunch 4 insert smoothly if needed to have carried out the opening of this opening 21 to the shape of a perfect circle. It is not necessary to make the tip of the hair bunch 4 not necessarily protrude from the opening 22 of the other end of the tube-like object 2.

[0011]According to the hair holder 1 of this embodiment, since the plastic deformation member 3 has physical properties in which plastic deformation is free and which can hold a plastic deformation state, the winding state of the hair bunch 4 inserted in the tube-like object 2 and this tube-like object 2 during the winding work of the hair bunch 4 is held. In order that this plastic deformation member 3 may be free movable the tube-like object 2 and mutual, the gap of a relative position with this plastic deformation member 3 and this tube-like object 2 may arise and the prohibitive power over the stability of the hair bunch 4 by the plastic deformation member 3 may fully work, the winding state of the hair bunch 4 is hard to dispel in the middle of winding. Therefore, according to the hair holder 1 of this embodiment, a hair bunch can be wound around easy and certainly predetermined shape.

[0012]Next, other embodiments of the hair holder of this invention are described. Only a point which is different from a 1st embodiment about these embodiments is explained, and the explanation about a 1st embodiment is suitably applied to especially the point of not explaining.

[0013]The hair holder 1 of a 2nd embodiment is what transformed a part of 1st embodiment (refer to drawing 1), and as shown in drawing 3, the three plastic deformation members 3 are attached to the tube-like object 2. It has become the same [ those sum totals ] as the width of the plastic deformation member 3 of a 1st embodiment mostly [ the width of each plastic deformation member 3 ]. According to the hair holder 1 of a 2nd embodiment, the hair bunch 4 can be wound around easy and certainly predetermined shape like the hair holder of a 1st embodiment.

[0014]The hair holder 1 of a 3rd embodiment has the elasticity which can follow the plastic deformation state of this plastic deformation member 3, when the tube-like object 2 carries out plastic deformation of the plastic deformation member 3, as shown in drawing 4. Said tube-like object 2 is flat shape, and it has the network structure, and this network structure is a structure deformable to the longitudinal direction of this tube-like object 2, and one of said plastic deformation member 3 is attached to one field 23 of this tube-like object 2 almost in parallel with the longitudinal direction of this tube-like object 2.

[0015]If it has the elasticity which can follow the plastic deformation state of this plastic deformation member 3 as said tube-like object 2 when carrying out plastic deformation of said plastic deformation member 3, the nonwoven fabric and textiles in which various materials are used, for example, the network and the thread itself of resin have elasticity, knitting, etc. will be mentioned. As the tube-like object 2 in this embodiment is shown in drawing 4, it is formed so that the lattice-like network structure may carry out bias to the longitudinal direction of the tube-like object 2, and this elasticity is realized. The tube-like object 2 is pasted and the plastic deformation member 3 is being fixed in one.

[0016]Since the tube-like object 2 follows modification of the plastic deformation member 3 if it winds using the hair holder 1 of a 3rd embodiment after inserting the hair bunch 4 in the tube-like object 2, the prohibitive power over the stability of the hair bunch 4 fully works. Therefore, according to the hair holder 1 of a 3rd embodiment, the hair bunch 4 can be wound around easy and certainly predetermined shape like the hair holder of a 1st embodiment.

[0017]The hair holder 1 of a 4th embodiment is what transformed a part of 3rd embodiment (refer to drawing 4), and as shown in drawing 5, the three plastic deformation members 3 are attached to the tube-like object 2. As the hair holder 1 of a 5th embodiment is shown in drawing 6, the tube-like object 2 is flat shape, and it has the network structure, and this network structure is a structure deformable to the longitudinal direction of this tube-like object 2, and

the plastic deformation member 3 is attached to one field 23 of this tube-like object 2 at mesh shape. The composition of others in 4th and 5th embodiments is the same as that of a 3rd embodiment. According to the hair holder 1 of 4th and 5th embodiments, the hair bunch 4 can be wound around easy and certainly predetermined shape like the hair holder of a 3rd embodiment. [0018]Without being restricted to the embodiment mentioned above, unless it deviates from the meaning of this invention, the hair holder of this invention can be suitably changed, as shown below. What formed in tubed from the beginning what restriction in particular did not have, and sutured, welded or pasted up and formed the sheet about the formation method by extrusion molding etc. may be sufficient as a tube-like object. Although the various above-mentioned flexible materials are used as a web material which constitutes the tube-like object 2, Especially the various flexible sheets of 0.3 or less mN-m have the preferred Taber rigidity 0.4 or less mN-m, and the Taber rigidity as a sheet of 0.4 or less mN-m, For example, a nonwoven fabric (a polyethylene nonwoven fabric, a polyethylene terephthalate nonwoven fabric, etc.), Textile fabrics, the resin films (a polyethylene film, a polyethylene terephthalate film, etc.) of porosity or non-porosity, paper, the Polymer Division material sheet, a rubber sheet, resin nets, or these complexes are mentioned. Parallel may be sufficient as the mounting directions of a plastic deformation member at the longitudinal direction of a tube-like object, and bias may be sufficient as them. A plastic deformation installation part may be an outside-surface side of a tube-like object, and is an internal surface of a tube-like object. ["26" shown in drawing 1 (c)] It may be a side. The number of plastic deformation members can be selected suitably. As for the tip part of a plastic deformation member, it is preferred to give a radius of circle or to consider it as suitable shape in addition to this because of the connection prevention to the inner surface of a stowage, etc.

[0019]In 1st and 2nd embodiments, the structure of attaching a plastic deformation member and a tube-like object mutually free movable will not be limited to the structure shown in said embodiment, if this movable self-\*\* is realizable. For example, in the gestalt which stored the plastic deformation member to the stowage established in the tube-like object, it can have composition which carried out the one-point stop of the neighborhood of an end part of a plastic deformation member. Although the nonwoven fabric which has permeability to the hair treatment for permanent waves is used in 1st and 2nd embodiments as a sheet which constitutes a tube-like object, In this invention, the sheet of fluid impermeability can be used as a sheet which constitutes a tube-like object, and further, a zipper can be provided in the opening of the other end of a tube-like object, and it can also be considered as the structure which can blockade this opening. In the 3rd - a 5th embodiment, embedded shaping, weld, a tuck, a bridge, etc. can perform immobilization with a tube-like object and a plastic deformation member, and a plastic deformation member can consider it as a tube-like object and the gestalt attached free movable. In the 1st - a 5th embodiment, although the both ends are carrying out the opening of the tube-like object, it may form the means which the one end can carry out the opening of the tube-like object, and can be annoyed by the other end.

[0020]In 1st and 2nd embodiments, the plastic deformation member may be provided in both sides of the tube-like object. In a 5th embodiment, it may be provided in the tube-like object so that the plastic deformation member may be provided only in one field of the tube-like object and two or more plastic deformation members may not cross. Two or more plastic deformation members may be provided in the tube-like object in the shape of a lattice. Portions of the 1st - a 5th embodiment different, respectively can also be made into the gestalt which was changed suitably or was combined. When the shape of the web material which constitutes the "tube-like object" in the hair holder of this invention, and its surface state just form the tube-like object of an above-mentioned gestalt and it calls it "flat shape", the surface of a web material may be a rugged surface.

[0021]The directions for the hair holder of this invention are not limited to the operating mode of the hair holder of a 1st embodiment, either. For example, the hair bunch inserted in a hair holder and it may be wound so that a plastic deformation member may become outside. What is necessary is just to pour in the hair treatment for permanent waves from the opening of a tube-like object, when a tube-like object carries out permanent wave processing using the hair holder

which comprises a sheet of non-fluid permeability. When that by which the other end of the thing which the opening of the other end of a tube-like object can lid by a zipper, or a tubed part is annoyed is used, The hair treatment poured in from the opening of the end collects on the inside of a tube-like object, it can avoid leaking out of it, the amount of the hair treatment used is reduced, and hair treatment can be prevented from adhering to hair superfluously. The hair holder of this invention not only in when permanent wave processing gives curl to hair, After winding a hair bunch, the hair in the state where heat-treated with the dryer etc., held the dry hair in the state of winding, or it got wet is held in the state of winding, and natural seasoning is carried out, and when giving curl to hair, it can apply. It can apply, when giving curl wavelike to hair except when giving curl at the tip of hair, and giving curl spirally to hair.

[0022]

[Effect of the Invention]According to the hair holder of this invention, a hair bunch can be wound around easy and certainly predetermined shape.

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[Translation done.]

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1]Drawing 1 is a figure showing a 1st embodiment of the hair holder of this invention, and the figure in which (a) shows the perspective view and (b) shows the expanded state of the tube-like object, and (c) are the typical sectional views of the c-c line section in (a).

[Drawing 2]Drawing 2 is a figure showing one operating mode of a 1st embodiment of the hair holder of this invention, and (a), (b), (c), and (d) are the perspective views showing the winding procedure of a hair bunch one by one, respectively.

[Drawing 3]Drawing 3 is a figure showing the expanded state of the tube-like object about a 2nd embodiment of the hair holder of this invention. [Drawing 1 (b) considerable figure] .

[Drawing 4]Drawing 4 is a figure showing a 3rd embodiment of the hair holder of this invention, and it is a figure in which (a) shows the perspective view and (b) shows the expanded state of the tube-like object.

[Drawing 5]Drawing 5 is a figure showing the expanded state of the tube-like object about a 4th embodiment of the hair holder of this invention. [Drawing 4 (b) considerable figure] .

[Drawing 6]Drawing 6 is a figure showing the expanded state of the tube-like object about a 5th embodiment of the hair holder of this invention. [Drawing 4 (b) considerable figure] .

[Description of Notations]

1 Hair holder

2 Tube-like object

21 and 22 Opening

23 One field

24 The field of another side

25 Stowage

3 Plastic deformation member

4 Hair bunch

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[Translation done.]



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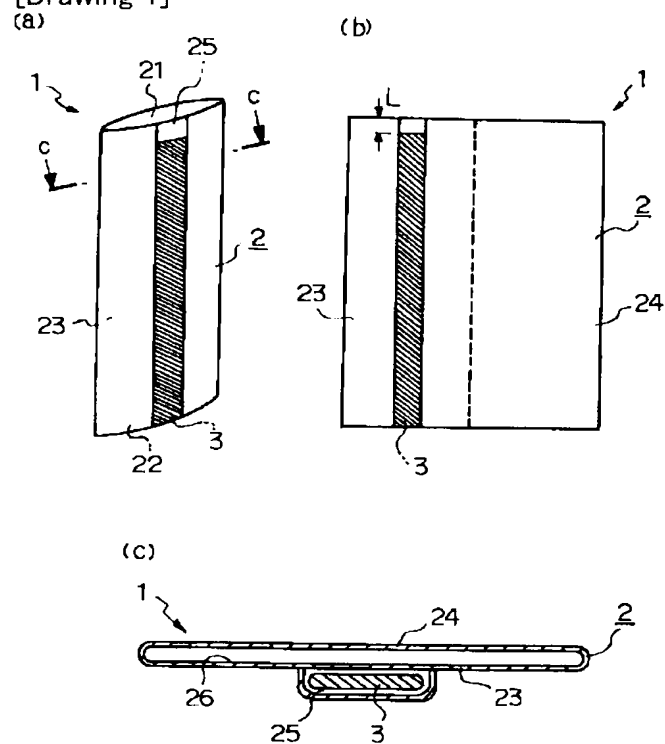
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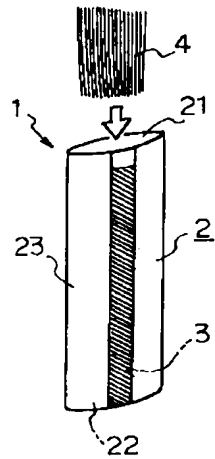
## DRAWINGS

[Drawing 1]

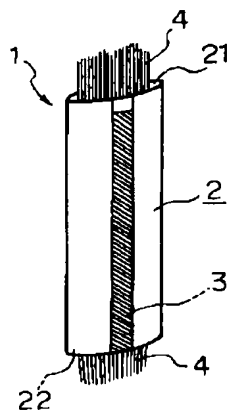


[Drawing 2]

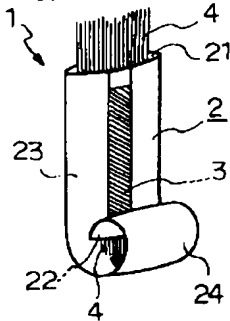
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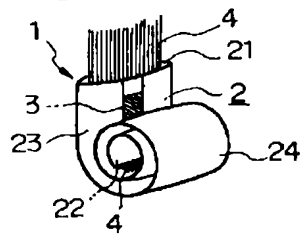
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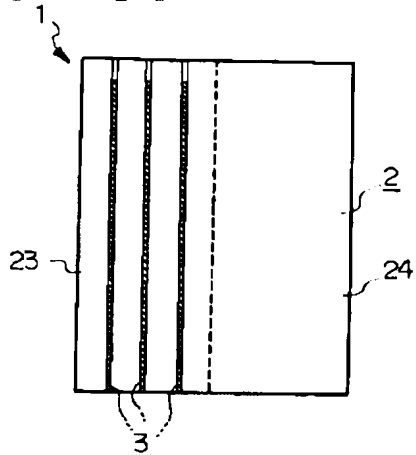
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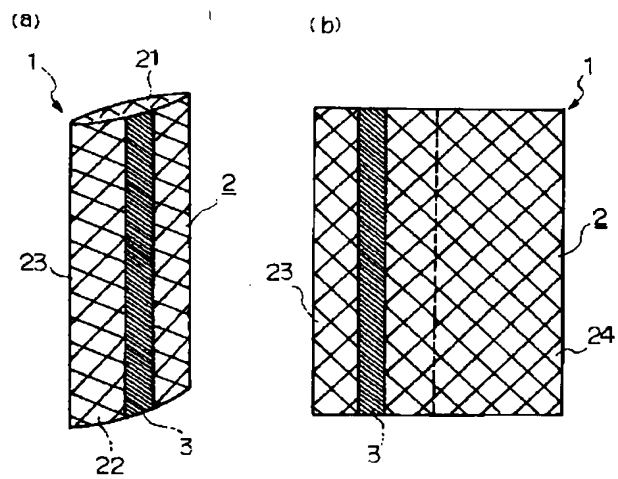
(d)



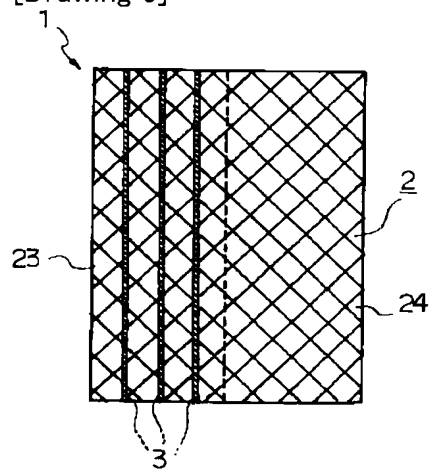
[Drawing 3]



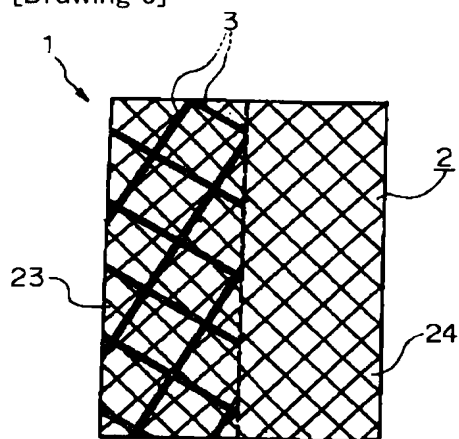
[Drawing 4]



[Drawing 5]



[Drawing 6]



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(71) 出願人 000000918

花王株式会社

東京都中央区日本橋茅場町1丁目14番10号

(72) 発明者 東城 武彦

栃木県芳賀郡市貝町赤羽2606 花王株式会社  
社研究所内

(72) 発明者 小林 英男

栃木県芳賀郡市貝町赤羽2606 花王株式会社  
社研究所内

(74) 代理人 100076532

弁理士 羽鳥 修 (外1名)

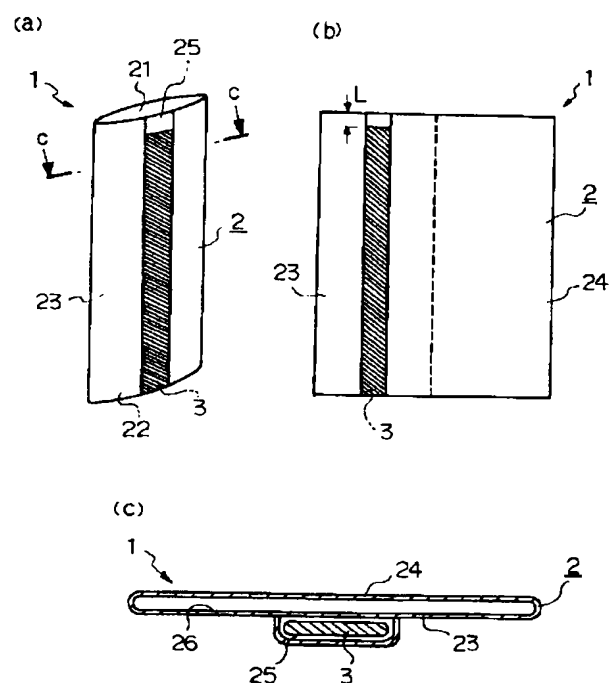
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(54) 【発明の名称】 毛髪保持具

(57) 【要約】

【課題】 毛髪束を容易且つ確実に所定の形状に巻回することができる毛髪保持具を提供すること。

【解決手段】 一端の開口部21から他端の開口部22に向けて毛髪束を挿通可能な筒状体2と、該筒状体2に取付けられ、塑性変形自在で且つ塑性変形状態を保持可能な塑性変形部材3とを備え、前記筒状体2は、前記塑性変形部材3を塑性変形させた際に該塑性変形部材3の塑性変形状態に追従し得るようにしてあり、前記塑性変形部材3は、前記筒状体2に該筒状体2と相互に可動自在に取付けられている。



## 【特許請求の範囲】

【請求項 1】 一端の開口部から他端の開口部に向けて毛髪束を挿通可能な筒状体と、該筒状体に取り付けられ、塑性変形自在で且つ塑性変形状態を保持可能な塑性変形部材とを備え、前記筒状体は、前記塑性変形部材を塑性変形させた際に該塑性変形部材の塑性変形状態に追従し得るようにしてある毛髪保持具。

【請求項 2】 前記塑性変形部材は、前記筒状体に該筒状体と相互に可動自在に取り付けられている請求項 1 記載の毛髪保持具。

【請求項 3】 前記筒状体は、扁平状で且つ実質的に伸縮性を有しておらず、前記塑性変形部材は、該筒状体の一方の面に該筒状体の長手方向と略平行に、1 本又は複数本取り付けられている請求項 1 又は 2 記載の毛髪保持具。

【請求項 4】 前記筒状体は、前記塑性変形部材を塑性変形させた際に該塑性変形部材の塑性変形状態に追従し得るような伸縮性を有している請求項 1 記載の毛髪保持具。

【請求項 5】 前記筒状体は、扁平状で且つ網目構造を有し、該網目構造は該筒状体の長手方向及び幅方向に変形可能な構造であり、前記塑性変形部材は、該筒状体の一方の面に該筒状体の長手方向と略平行に又は網目状若しくは格子状に、1 本又は複数本取り付けられている請求項 1 又は 4 記載の毛髪保持具。

【請求項 6】 前記筒状体は、その長手方向全長に亘って、テーパーこわさが  $0.4 \text{ mN} \cdot \text{m}$  以下である請求項 1 ～ 5 の何れかに記載の毛髪保持具。

【請求項 7】 一端の開口部から毛髪束を挿通可能で且つ他端に閉口可能な手段を設けてある筒状体と、該筒状体に取り付けられ、塑性変形自在で且つ塑性変形状態を保持可能な塑性変形部材とを備え、前記筒状体は、前記塑性変形部材を塑性変形させた際に該塑性変形部材の塑性変形状態に追従し得るようにしてある毛髪保持具。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】 本発明は、パーマ等により毛髪にカールを付与する場合に、毛髪束を所定の形状に巻回するときの補助具として用いられる毛髪保持具に関する。

## 【0002】

【従来の技術及び発明が解決しようとする課題】 シートを利用して毛髪にくせ付けする方法として、例えば実公昭 11-14546 号公報等に記載の手段が古くから知られているが、このような手段は毛髪の取り扱いが困難であった。そこで、毛髪をより取り扱いやすく、またくせ付けのハンドリングも容易に行えるようにした毛髪巻取り技術として、特開平 10-192036 号公報に

は、筒状にした毛髪巻取り具と塑性変形部材の組合せによる毛髪巻取り方法が提案されている。このような筒状毛髪巻取り具によれば、毛髪束が格段に取り扱いやすくなり非常に大きなメリットがある。しかし、前記毛髪巻取り具をくせ付けのために筒状に変形させると、毛髪巻取り具と塑性変形部材との間に必然的に歪みが生じてしまう。この歪みは筒状の毛髪保持具に挿入する毛髪束が増えるほど、また毛髪に曲率の大きなウェーブを付けようとするほど顕著になる。また、歪みを解消しない状態でくせ付けを行うと復元力が大きいため変形させた形状を十分に保持できず、思い通りのウェーブを作ることができない。即ち、綺麗な円形なウェーブにならず、不均一な多角形のウェーブが形成されてしまう。

【0003】 従って、本発明の目的は、毛髪束を容易且つ確実に所定の形状に巻回することができる毛髪保持具を提供することにある。

## 【0004】

【課題を解決するための手段】 本発明者らは、種々検討を重ねた結果、前述の毛髪保持具における筒状体を、その塑性変形部材を塑性変形させた際に該塑性変形部材の塑性変形状態に追従し得るように構成することにより、前記目的を達成できることを知見した。本発明は、上記知見に基づいてなされたもので、一端の開口部から他端の開口部に向けて毛髪束を挿通可能な筒状体と、該筒状体に取り付けられ、塑性変形自在で且つ塑性変形状態を保持可能な塑性変形部材とを備え、前記筒状体は、前記塑性変形部材を塑性変形させた際に該塑性変形部材の塑性変形状態に追従し得るようにしてある毛髪保持具を提供するものである。

## 【0005】

【発明の実施の形態】 以下、本発明の毛髪保持具を、その好ましい一実施形態（第 1 実施形態）について、図 1 及び図 2 を参照して説明する。第 1 実施形態の毛髪保持具 1 は、図 1 及び図 2 に示すように、一端の開口部 21 から他端の開口部 22 に向けて毛髪束 4 を挿通可能な筒状体 2 と、該筒状体 2 に取り付けられ、塑性変形自在で且つ塑性変形状態を保持可能な塑性変形部材 3 とを備え、前記筒状体 2 は、前記塑性変形部材 3 を塑性変形させた際に該塑性変形部材 3 の塑性変形状態に追従し得るようになっている。前記塑性変形部材 3 は、前記筒状体 2 に該筒状体 2 と相互に可動自在に取り付けられている。また、前記筒状体 2 は、扁平状で且つ実質的に伸縮性を有しておらず、前記塑性変形部材 3 は、図 1 に示すように、該筒状体 2 の一方の面 23 に該筒状体 2 の長手方向と略平行に、1 本取り付けられている。尚、図 1 (a) 及び (b) において、塑性変形部材 3 をハッチングして図示しているが、詳細には、図 1 (c) に示すように、塑性変形部材 3 は、収納部 25（後述）に収納されており、露出していない。

【0006】 第 1 実施形態の毛髪保持具 1 について更に

詳述する。第1実施形態の毛髪保持具1における筒状体2は、2枚の短冊状のシート材を、その長手方向に沿う端部同士を接着して形成された扁平状である。筒状体2における扁平状の一方の面23の外側の長手方向中央部には、図1(a)～(c)に示すように、前記塑性変形部材3を収納し得る形状を有する扁平筒状の収納部25が設けられている。扁平状の筒状体2の大きさは、毛髪の長さやくせ付けしたい場所、挿入する毛髪束の量に応じて適宜選択できる。

【0007】筒状体2を構成するシート材としては、各種可撓性材料が用いられ、例えば、不織布、織物、編み物、多孔性又は非多孔性の樹脂フィルム、紙、樹脂ネット、又はこれらの複合体等が挙げられる。本実施形態においては、実質的に伸縮性を有しておらず、パーマ用の毛髪処理剤に対して透過性を有し且つテーパーこわさが0.4mN・m以下の不織布が用いられている。前記「テーパーこわさ」は、JIS P8125に規定される「こわさ試験方法」により測定されるテーパーこわさである。シート材の厚みは、特に限定されないが、好ましくは5μm～500μmである。シート材のテーパーこわさ及び厚みは、シート全体で均一の方が好ましい。

【0008】塑性変形部材3としては、塑性変形自在で且つ塑性変形状態を保持可能なものであれば各種材料が用いられ、例えば、アルミニウム、ステンレス鋼、銅等が挙げられる。塑性変形部材3は、耐食性が要求されるため、樹脂(図示せず)により被覆されている。塑性変形部材3は、筒状体2が該塑性変形部材3を塑性変形させた際に該塑性変形部材3の塑性変形状態に追従し得るように、筒状体2に取付けられるが、その長さは、筒状体2の長さの80%～100%であるか又は筒状体2の長さより0mm～30mm短い〔図1(b)に示す「L」〕ことが好ましく、該塑性変形部材3の幅は、0.05cm～8cmであることが好ましく、人の力で容易に変形できる範囲に調整できる。

【0009】収納部25は、前述した如く筒状体2が塑性変形部材3を追従し得るように、塑性変形部材3が該収納部25の内部を摺動可能に、その長さ及び断面が選定される。また、収納部25の長手方向両端部は、塑性変形部材3が収納部25内から脱落しないように閉口されている。

【0010】次に、本発明の毛髪保持具の第1実施形態の一使用態様として、パーマ処理により毛髪(頭髮)に直接カールを付与する場合について、図2を参照しながら説明する。尚、図2においてはロッドの図示を省略している。まず、毛髪束4の量や得ようとするカール形状に応じて、適当な長さ及び幅を有する筒状体2からなる毛髪保持具1を用い、図2(a)に示すように、筒状体2の一端の開口部21を楕円形状に開口して、該開口部21から毛髪束4を挿入する。そして、図2(b)に示すように、毛髪束4を、その先端が筒状体2の他端の開

口部22から少しはみ出るまで、筒状体2に挿通させる。毛髪束4を筒状体2に挿通させた後、図2(c)及び(d)に示すように、毛髪保持具1を筒状体2の他端の開口部22の側から、所望の巻回径で巻回する。このとき、筒状体2の内側にロッドのような中芯を入れて巻回してもよい。また、輪ゴム(図示せず)等の周知の固定手段を用いて毛髪束4の巻回状態を保持してもよい。その後、筒状体2の外側からパーマ用の毛髪処理剤を毛髪束4に付与する。所定時間後、筒状体2から毛髪束4を挿脱し、洗髪等して、パーマ処理を完了する。尚、筒状体2の開口部21から毛髪束4を挿入させる際に、必要に応じ、該開口部21を真円状に開口した方が、毛髪束4をスムーズに挿入させ易い。また、必ずしも、毛髪束4の先端を筒状体2の他端の開口部22からはみ出させる必要はない。

【0011】本実施形態の毛髪保持具1によれば、塑性変形部材3が、塑性変形自在で且つ塑性変形状態を保持可能な物性を有しているため、毛髪束4の巻回作業中において、筒状体2及び該筒状体2に挿通された毛髪束4の巻回状態が保持される。また、該塑性変形部材3が筒状体2と相互に可動自在になっており、該塑性変形部材3と該筒状体2との相対位置のズレが生じ、塑性変形部材3による毛髪束4の復元力に対する抑制力が充分に働くため、巻回途中で毛髪束4の巻回状態が解かれ難い。従って、本実施形態の毛髪保持具1によれば、毛髪束を容易且つ確実に所定の形状に巻回することができる。

【0012】次に、本発明の毛髪保持具の他の実施形態について説明する。これらの実施形態については、第1実施形態と異なる点についてのみ説明し、特に説明しない点については、第1実施形態に関する説明が適宜適用される。

【0013】第2実施形態の毛髪保持具1は、第1実施形態(図1参照)を一部変形したもので、図3に示すように、3本の塑性変形部材3が筒状体2に取付けられている。各塑性変形部材3の幅は、それらの合計が第1実施形態の塑性変形部材3の幅とほぼ同じになっている。第2実施形態の毛髪保持具1によれば、第1実施形態の毛髪保持具と同様に、毛髪束4を容易且つ確実に所定の形状に巻回することができる。

【0014】第3実施形態の毛髪保持具1は、図4に示すように、筒状体2が、塑性変形部材3を塑性変形させた際に該塑性変形部材3の塑性変形状態に追従し得るような伸縮性を有している。前記筒状体2は、扁平状で且つ網目構造を有し、該網目構造は該筒状体2の長手方向に変形可能な構造であり、前記塑性変形部材3は、該筒状体2の一方の面23に該筒状体2の長手方向と略平行に、1本取り付けられている。

【0015】前記筒状体2としては、前記塑性変形部材3を塑性変形させた際に該塑性変形部材3の塑性変形状態に追従し得るような伸縮性を有していれば、各種材料

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が用いられ、例えば、樹脂のネットや、糸自身が伸縮性を有する不織布、織物、編み物等が挙げられる。本実施形態における筒状体 2 は、図 4 に示すように、格子状の網目構造が筒状体 2 の長手方向に斜行するように形成され、かかる伸縮性が実現されている。塑性変形部材 3 は、筒状体 2 に接着されて一体的に固定されている。

【0016】第 3 実施形態の毛髪保持具 1 を用い、毛髪束 4 を筒状体 2 に挿通してから巻回すると、筒状体 2 が塑性変形部材 3 の変形に追従するため、毛髪束 4 の復元力に対する抑制力が十分に働く。そのため、第 3 実施形態の毛髪保持具 1 によれば、第 1 実施形態の毛髪保持具と同様に、毛髪束 4 を容易且つ確実に所定の形状に巻回することができる。

【0017】第 4 実施形態の毛髪保持具 1 は、第 3 実施形態（図 4 参照）を一部変形したもので、図 5 に示すように、3 本の塑性変形部材 3 が筒状体 2 に取付けられている。また、第 5 実施形態の毛髪保持具 1 は、図 6 に示すように、筒状体 2 が扁平状で且つ網目構造を有し、該網目構造が該筒状体 2 の長手方向に変形可能な構造であり、塑性変形部材 3 が該筒状体 2 の一方の面 23 に網目状に取り付けられている。第 4 及び第 5 実施形態におけるその他の構成は、第 3 実施形態と同様である。第 4 及び第 5 実施形態の毛髪保持具 1 によれば、第 3 実施形態の毛髪保持具と同様に、毛髪束 4 を容易且つ確実に所定の形状に巻回することができる。

【0018】本発明の毛髪保持具は、前述した実施形態に制限されることなく、本発明の趣旨を逸脱しない限り、以下に示すように適宜変更が可能である。筒状体は、その形成方法について特に制限はなく、シートを縫合、融着又は接着して形成したものでも、押出成形等により当初から筒状に形成したものでもよい。また、筒状体 2 を構成するシート材としては、前述の各種可撓性材料が用いられるが、テーパーこわさが  $0.4 \text{ mN} \cdot \text{m}$  以下、特に  $0.3 \text{ mN} \cdot \text{m}$  以下の各種可撓性シートが好ましく、テーパーこわさが  $0.4 \text{ mN} \cdot \text{m}$  以下のシートとしては、例えば、不織布（ポリエチレン不織布、ポリエチレンテレフタレート不織布等）、織布、多孔性又は非多孔性の樹脂フィルム（ポリエチレンフィルム、ポリエチレンテレフタレートフィルム等）、紙、高分子材料シート、ゴムシート、樹脂ネット、又はこれらの複合体等が挙げられる。塑性変形部材の配置方向は、筒状体の長手方向に平行でもよく、斜行でもよい。塑性変形部材の取付箇所は、筒状体の外表面側でもよく、筒状体の内表面〔図 1（c）に示す「26」〕側でもよい。塑性変形部材の数は、適宜選定できる。塑性変形部材の先端部は、収納部の内面等への引っ掛かり防止のため、丸みを持たせたり、その他適当な形状とすることが好ましい。

【0019】第 1 及び第 2 実施形態において、塑性変形部材と筒状体とを相互に可動自在に取り付ける構造は、該可動自在が実現できれば、前記実施形態に示す構造に

限定されない。例えば、筒状体に設けられた収納部に塑性変形部材を収納した形態において、塑性変形部材の一端部近傍を一点留めした構成とすることができる。第 1 及び第 2 実施形態においては、筒状体を構成するシートとして、パーマ用の毛髪処理剤に対して透過性を有する不織布を用いているが、本発明においては、筒状体を構成するシートとして液不透過性のシートを用いることができ、更に、筒状体の他端の開口部にチャックを設け、該開口部を閉塞可能な構造とすることもできる。第 3 ～第 5 実施形態においては、筒状体と塑性変形部材との固定は、埋込成形、融着、縫い込み、ブリッジ等で行うことができ、また、塑性変形部材が筒状体と可動自在に取付けられた形態とすることができる。更に、第 1 ～第 5 実施形態においては、筒状体は、その両端が開口しているが、筒状体は、その一端が開口し且つその他端に閉口可能な手段を設けてあるものでもよい。

【0020】第 1 及び第 2 実施形態においては、塑性変形部材が筒状体の両面に設けられていてもよい。第 5 実施形態において、塑性変形部材が筒状体の一方の面のみに設けられていてもよく、また、複数本の塑性変形部材が交差しないように、筒状体に設けられていてもよい。更に、複数本の塑性変形部材が格子状に、筒状体に設けられていてもよい。更に、第 1 ～第 5 実施形態のそれぞれ異なる部分を、適宜変更したり組み合わせた形態とすることもできる。尚、本発明の毛髪保持具における「筒状体」を構成するシート材の形状及びその表面状態は、上述の形態の筒状体を形成可能なものであれば良く、「扁平状」という場合、シート材の表面は、凹凸面であってもよい。

【0021】また、本発明の毛髪保持具の使用法も、第 1 実施形態の毛髪保持具の使用態様に限定されない。例えば、毛髪保持具及びそれに挿通された毛髪束を、塑性変形部材が外側になるように巻回してもよい。筒状体の不液透過性のシートから構成されている毛髪保持具を用いてパーマ処理をする場合には、パーマ用の毛髪処理剤を筒状体の開口部から注入すればよい。更に、筒状体の他端の開口部がチャックで閉蓋可能なもの又は筒状体の他端が閉口しているものを用いた場合には、一端の開口部から注入された毛髪処理剤が筒状体の内部に溜まり、その外に漏れないようにすることができ、毛髪処理剤の使用量を削減し、毛髪処理剤が不必要に毛髪に付着することを防止できる。また、本発明の毛髪保持具は、パーマ処理により毛髪にカールを付与する場合に限らず、毛髪束を巻回した後、ドライヤー等により熱処理したり、乾燥した毛髪を巻回状態で保持したり、濡れた状態の毛髪を巻回状態で保持し自然乾燥させたりして、毛髪にカールを付与する場合等にも適用することができる。また、毛髪先端にカールを付与する場合以外にも、毛髪に波状にカールを付与する場合、毛髪に螺旋状にカールを付与する場合等にも適用が可能である。

## 【0022】

【発明の効果】本発明の毛髪保持具によれば、毛髪束を容易且つ確実に所定の形状に巻回することができる。

## 【図面の簡単な説明】

【図1】図1は、本発明の毛髪保持具の第1実施形態を示す図で、(a)は、その斜視図、(b)は、その筒状体の展開状態を示す図、(c)は、(a)におけるc-c線断面の模式的断面図である。

【図2】図2は、本発明の毛髪保持具の第1実施形態の一使用態様を示す図で、(a)、(b)、(c)及び (d)は、それぞれ毛髪束の巻回手順を順次示す斜視図である。

【図3】図3は、本発明の毛髪保持具の第2実施形態について、その筒状体の展開状態を示す図である〔図1 (b) 相当図〕。

【図4】図4は、本発明の毛髪保持具の第3実施形態を示す図で、(a)は、その斜視図、(b)は、その筒状\*

\* 体の展開状態を示す図である。

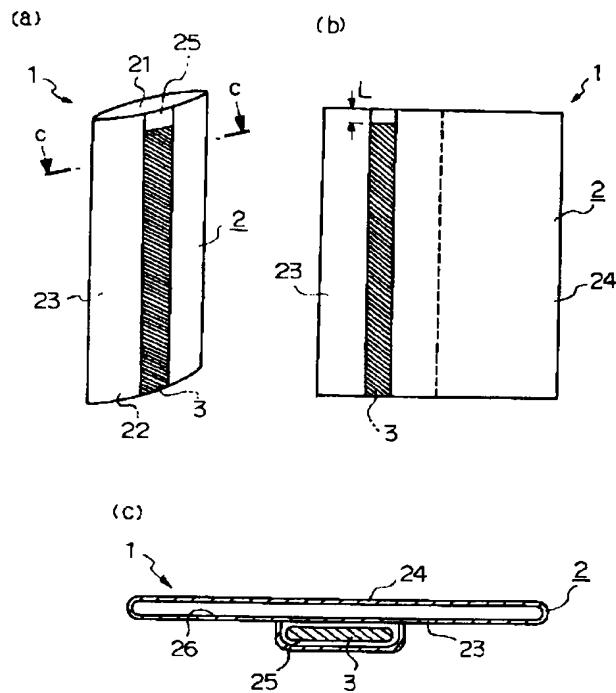
【図5】図5は、本発明の毛髪保持具の第4実施形態について、その筒状体の展開状態を示す図である〔図4 (b) 相当図〕。

【図6】図6は、本発明の毛髪保持具の第5実施形態について、その筒状体の展開状態を示す図である〔図4 (b) 相当図〕。

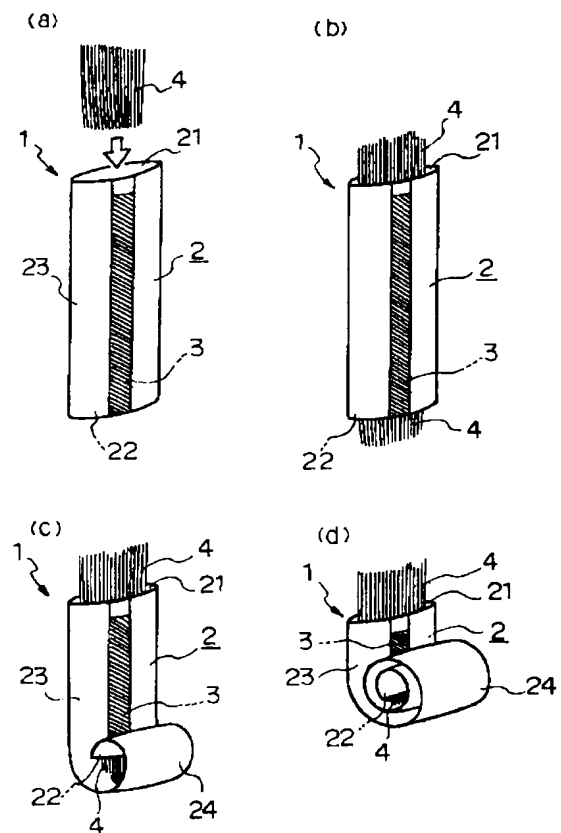
## 【符号の説明】

- 1 毛髪保持具
- 2 筒状体
- 21、22 開口部
- 23 一方の面
- 24 他方の面
- 25 収納部
- 3 塑性変形部材
- 4 毛髪束

【図1】

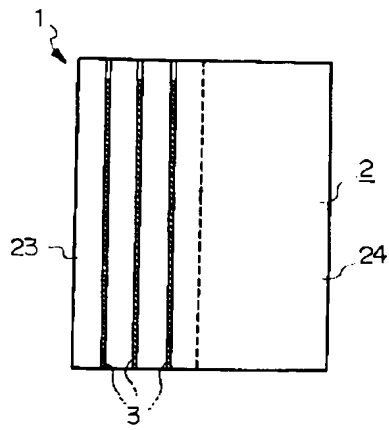


【図2】

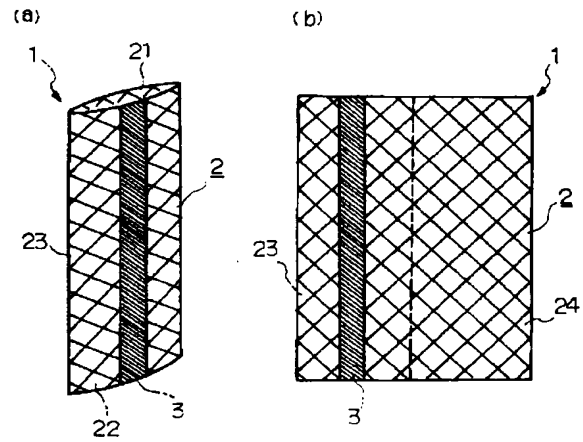




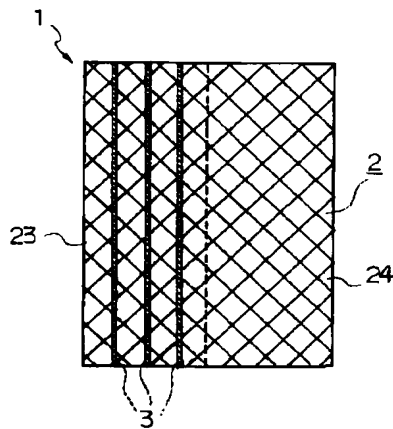
【図3】



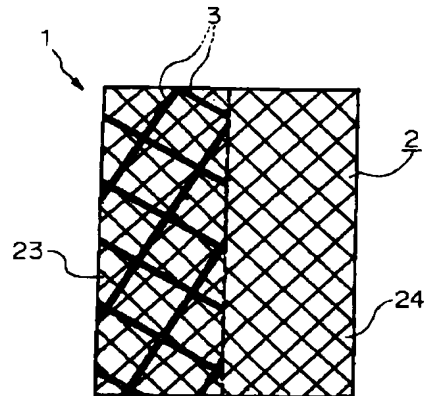
【図4】



【図5】



【図6】



フロントページの続き

(72) 発明者 吉田 泰淳  
栃木県芳賀郡市貝町赤羽2606 花王株式会  
社研究所内

(72) 発明者 佐藤 雅安  
栃木県芳賀郡市貝町赤羽2606 花王株式会  
社研究所内

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